VERSION CONTROL SYSTEM

Git & GitHub

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CONSULTADD INC

Exercise 1: Create your first Commit.

Task:

- Initialize your Repository: git init project Exercise-1

- Create a file with name index.html

- Write code in newly created file

- Stage index.html

- Commit with message 'Initial Message.'

Exercise 2: Commit only one file.

Task:

- Initialize your Repository: git init Exercise-2

- Create a files with names index.html and about.html

- Add code in both files.

- Stage only one file.

- Commit with message: '**File x added**.'


```
MINGW64:/c/Users/Trishok/Desktop/Exercise_2

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop
$ mkdir Exercise_2

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop
$ cd Exercise_2

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_2
$ git init
Initialized empty Git repository in C:/Users/Trishok/Desktop/Exercise_2/.git/

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_2 (master)
$ nano index.html

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_2 (master)
$ nano about.html

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_2 (master)
$ git add index.html
warning: LF will be replaced by CRLF in index.html.
The file will have its original line endings in your working directory

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_2 (master)
$ git commit -m "File index.html added"
[master (root-commit) c4675f7] File index.html added
 1 file changed, 1 insertion(+)
 create mode 100644 index.html

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_2 (master)
$ git status
On branch master
Untracked files:
  (use "git add <file>..." to include in what will be committed)
        about.html

nothing added to commit but untracked files present (use "git add" to track)

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_2 (master)
$
```

Exercise 3: Modify last commit.

Task:

- Initialize your Repository: git init project Exercise-3

- Create a file with name index.html

- Write code in newly created file

- Stage index.html

- Commit with message 'adding index.html.'

- Add new about.html file with some code.

- Now modify message of previous commit as 'Adding index.html and about.html 'and add about.html file in previous commit.

Exercise 4: Create git ignore file

Task:

- Initialize your Repository: git init Exercise-4

- Create a gitignore file that will ignore

  - all files with 'exe' extension

  - all files with 'o' extension

  - all files with 'jar' extension

  - the whole libraries directory

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MINGW64:/c/Users/Trishok/Desktop/Exercise_4

```
Trishok@DESKTOP-PK0TND2 MINGW64 ~
$ cd Desktop/

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop
$ mkdir Exercise_4

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop
$ cd Exercise_4

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_4
$ git init
Initialized empty Git repository in C:/Users/Trishok/Desktop/Exercise_4/.git/

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_4 (master)
$ git status
On branch master

No commits yet

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        a.exe
        b.exe
        c.exe
        first.jar
        index.html
        int.o
        libraries/
        second.jar
        text.o

nothing added to commit but untracked files present (use "git add" to track)

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_4 (master)
$ nano .gitignore
```

```
Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_4 (master)
$ cat .git
.git/       .gitignore

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_4 (master)
$ cat .gitignore
*.exe
*.o
*.jar
libraries

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_4 (master)
$ git add .gitignore
warning: LF will be replaced by CRLF in .gitignore.
The file will have its original line endings in your working directory

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_4 (master)
$ git status
On branch master

No commits yet

Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
        new file:   .gitignore

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        index.html

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_4 (master)
$
```

Exercise 5: Save your work with stash.

Task:

- Initialize your Repository: git init Exercise-5

- Add some random files with code

- Now use git stash command to save required files from above files.

(For this exercise don't send repository just submit git commands and output of

git stash list)


```
Trishok@DESKTOP-PK0TND2 MINGW64 ~
$ cd Desktop/

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop
$ mkdir Exercise_5

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop
$ cd Exercise_5

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_5
$ ls
about.html  index.html  text.html

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_5
$ git add about.html
fatal: not a git repository (or any of the parent directories): .git

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_5
$ git init
Initialized empty Git repository in C:/Users/Trishok/Desktop/Exercise_5/.git/

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_5 (master)
$ git add about.html
warning: LF will be replaced by CRLF in about.html.
The file will have its original line endings in your working directory

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_5 (master)
$ git commit -m "added about.html"
[master (root-commit) 2862df0] added about.html
 1 file changed, 2 insertions(+)
 create mode 100644 about.html

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_5 (master)
$ git add .
warning: LF will be replaced by CRLF in index.html.
The file will have its original line endings in your working directory

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_5 (master)
$ vim index.html
```

```
Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_5 (master)
$ git status
On branch master
Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
        new file:   index.html
        new file:   text.html

Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
        modified:   index.html

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_5 (master)
$ git add index.html
warning: LF will be replaced by CRLF in index.html.
The file will have its original line endings in your working directory

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_5 (master)
$ git stash
Saved working directory and index state WIP on master: 2862df0 added about.html

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_5 (master)
$ git stash list
stash@{0}: WIP on master: 2862df0 added about.html

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_5 (master)
$ git status
On branch master
nothing to commit, working tree clean

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_5 (master)
$
```

Exercise 6: Reset Previous Commit Keeping changes. (Soft Reset)

Task:

- Initialize your Repository: git init Exercise-6.

- Do some series of commits.

- Now use git reset command to reset one of the commit and keep changes in staging area.

In answer also add output of git status command.

Exercise 7: Reset Previous Commit (Hard Reset).

Task:

- Initialize your Repository: git init Exercise-7.

- Do some series of commits.

- Use git reset command to reset one of the commit without keeping

  changes.

Exercise 8: Merge branch (No Conflicts).

Task:

- Initialize your Repository: git init Exercise-8

- Create index.html file add some code.

- Make Commit.

- Create new branch from master branch with name **my-feature**.

- Add about-us.html file with code and commit changes in my-feature branch.

- Now checkout master branch.

- Merge my-feature branch into master.

MINGW64:/c/Users/Trishok/Desktop/Exercise_8

```
Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop
$ mkdir Exercise_8

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop
$ cd Exercise_8

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_8
$ git init
Initialized empty Git repository in C:/Users/Trishok/Desktop/Exercise_8/.git/

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_8 (master)
$ nano index.html

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_8 (master)
$ git add index.html
warning: LF will be replaced by CRLF in index.html.
The file will have its original line endings in your working directory

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_8 (master)
$ git commit -m "adding index.html file"
[master (root-commit) 5af63f7] adding index.html file
 1 file changed, 2 insertions(+)
 create mode 100644 index.html

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_8 (master)
$ git checkout -b my-feature
Switched to a new branch 'my-feature'

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_8 (my-feature)
$ nano about-us.html

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_8 (my-feature)
$ git add about-us.html
warning: LF will be replaced by CRLF in about-us.html.
The file will have its original line endings in your working directory

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_8 (my-feature)
$ git commit -m "adding about-us.html"
[my-feature f511fd5] adding about-us.html
 1 file changed, 2 insertions(+)
 create mode 100644 about-us.html

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_8 (my-feature)
$ git checkout master
Switched to branch 'master'
```

MINGW64:/c/Users/Trishok/Desktop/Exercise_8

```
Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_8 (my-feature)
$ git checkout master
Switched to branch 'master'

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_8 (master)
$ git merge my-feature
Updating 5af63f7..f511fd5
Fast-forward
 about-us.html | 2 ++
 1 file changed, 2 insertions(+)
 create mode 100644 about-us.html

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Desktop/Exercise_8 (master)
$ ls
about-us.html  index.html
```

Exercise 9: Merge branch (Conflicts).

Task:

- Initialize your Repository: git init Exercise-9

- Create index.html file add some code.

- Make Commit.

- Create new branch from master branch with name my-feature.

- Add about-us.html file with code

- Make changes in index.html

- Commit changes in my-feature branch.

- Now checkout master branch.

- Do some code changes in index.html

- Commit changes.

- Now merge my-feature branch into master.

- You will get conflicts for index.html file. Resolve conflict by selecting both changes for the same index.html file.

```
Trishok@DESKTOP-PK0TND2 MINGW64 ~
$ mkdir Exercise_9

Trishok@DESKTOP-PK0TND2 MINGW64 ~
$ cd Exercise_9

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Exercise_9
$ git init
Initialized empty Git repository in C:/Users/Trishok/Exercise_9/.git/

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Exercise_9 (master)
$ nano index.html

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Exercise_9 (master)
$ git add index.html
warning: LF will be replaced by CRLF in index.html.
The file will have its original line endings in your working directory

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Exercise_9 (master)
$ git commit -m "added file"
[master (root-commit) 3af036a] added file
 1 file changed, 2 insertions(+)
 create mode 100644 index.html

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Exercise_9 (master)
$ git checkout -b my-feature
Switched to a new branch 'my-feature'

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Exercise_9 (my-feature)
$ nano about-us.html

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Exercise_9 (my-feature)
$ git add about-us.html
warning: LF will be replaced by CRLF in about-us.html.
The file will have its original line endings in your working directory

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Exercise_9 (my-feature)
$ git commit -m "added a file"
[my-feature 220e16c] added a file
 1 file changed, 2 insertions(+)
 create mode 100644 about-us.html

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Exercise_9 (my-feature)
$ vim index.html
```

```
Trishok@DESKTOP-PK0TND2 MINGW64 ~/Exercise_9 (my-feature)
$ git add index.html
warning: LF will be replaced by CRLF in index.html.
The file will have its original line endings in your working directory

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Exercise_9 (my-feature)
$ git commit -m "added changes"
[my-feature d22b638] added changes
 1 file changed, 1 insertion(+), 1 deletion(-)

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Exercise_9 (my-feature)
$ git checkout master
Switched to branch 'master'

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Exercise_9 (master)
$ vim index.html

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Exercise_9 (master)
$ git add index.html

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Exercise_9 (master)
$ git commit -m "added changes"
[master 698b3e9] added changes
 1 file changed, 1 insertion(+), 1 deletion(-)

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Exercise_9 (master)
$ git merge mybranch
merge: mybranch - not something we can merge

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Exercise_9 (master)
$ git merge my-feature
Auto-merging index.html
CONFLICT (content): Merge conflict in index.html
Automatic merge failed; fix conflicts and then commit the result.

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Exercise_9 (master|MERGING)
$ git mergetool
Merging:
index.html

Normal merge conflict for 'index.html':
  {local}: modified file
  {remote}: modified file
index.html seems unchanged.
Was the merge successful [y/n]? y
```

```
Trishok@DESKTOP-PK0TND2 MINGW64 ~/Exercise_9 (master|MERGING)
$ git status
On branch master
All conflicts fixed but you are still merging.
  (use "git commit" to conclude merge)

Changes to be committed:
        new file:   about-us.html
        modified:   index.html

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        index.html.orig

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Exercise_9 (master|MERGING)
$ git add index.html

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Exercise_9 (master|MERGING)
$ git commit -m "added file
> ^C

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Exercise_9 (master|MERGING)
$ git commit -m "added file"
[master 622986a] added file

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Exercise_9 (master)
$ git status
On branch master
Untracked files:
  (use "git add <file>..." to include in what will be committed)
        index.html.orig

nothing added to commit but untracked files present (use "git add" to track)
```

```
Trishok@DESKTOP-PK0TND2 MINGW64 ~/Exercise_9 (master)
$ git log
commit 622986ac161345671a8ae5fe931b27471d77f197 (HEAD -> master)
Merge: 698b3e9 d22b638
Author: prithvi14 <prithvit@umich.edu>
Date:   Mon Jun 28 23:51:35 2021 -0400

    added file

commit 698b3e9551e67f97c4c5061421d6f45b850d7955
Author: prithvi14 <prithvit@umich.edu>
Date:   Mon Jun 28 23:38:06 2021 -0400

    added changes

commit d22b638c605de0e29c9d91c0b7879af238b13e00 (my-feature)
Author: prithvi14 <prithvit@umich.edu>
Date:   Mon Jun 28 23:36:27 2021 -0400

    added changes

commit 220e16c917771708a29f15ba31ad0295d9dbea57
Author: prithvi14 <prithvit@umich.edu>
Date:   Mon Jun 28 23:34:30 2021 -0400

    added a file

commit 3af036a41183f30c4d4ca5cc68338817a3ae09dd
Author: prithvi14 <prithvit@umich.edu>
Date:   Mon Jun 28 23:33:09 2021 -0400

    added file

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Exercise_9 (master)
$ ls
about-us.html  index.html  index.html.orig

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Exercise_9 (master)
$ vim index.html.orgin

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Exercise_9 (master)
$ vim index.html.orig

Trishok@DESKTOP-PK0TND2 MINGW64 ~/Exercise_9 (master)
$ cat index.html
<<<<<<< HEAD
<h1> I am prithvi and I am student < /h1>
=======
<h1> I am prithvi and I love india </h1>
>>>>>>> my-feature
```

Timeline
This is just an estimation, please complete at your ease

Levels Assignment	Time in Minutes		
	Beginner	Intermediate	Expert
Exercise-1	15	10	5
Exercise-2	15	10	5
Exercise-3	30	20	15
Exercise-4	5	5	5
Exercise-5	25-30	20	15
Exercise-6	45	30	30
Exercise-7	45	30	30
Exercise-8	60	45	45
Exercise-9	90	60	60
Total Time	**5.08 HRs**	**3.83 HRs**	**3.5 HRs**

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